

THE APPLICATION OF POLI'S GENERIC NAMES.

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It is well known that much difference of opinion exists with regard to the generic names proposed by Poli in his "Testacea utriusque Siciliæ" (1791-5); some authors considering that there is nothing to hinder their adoption when they have priority to other names, while others are of opinion that they ought not to be employed in our modern system of conchological nomenclature. As a matter of fact neither view appears to be wholly correct, and I think it will be useful to publish some account of his method of nomenclature, so that, having the facts before him, every student of conchology may be able to form his own opinion of the matter.

Poli's work is in two folio volumes, and deals principally with the Lamellibranch Mollusca of the Mediterranean Sea. In the first volume (1791) he describes the animals of a certain number of species, indicating the genera and species by the current Linnean names. His anatomical descriptions and figures are excellent as far as they go, and he notices the points of agreement or difference which exist between the animals inhabiting the different kinds of shells.

Those animals which have certain characters in common he groups together under one generic name, and he perceives that the resemblances between the animals of different Linnean genera are often much greater than those between their respective shells, so that he regards the animals as congeneric in spite of the differences of the shells. Thus the animals of certain species of *Donax* and *Tellina* are grouped under the generic name of *Peronæa*, while those of the chief Mediterranean species of the Linnean genera *Maetra* and *Venus* are found to be so much alike, that all of them, except one, can be placed in the single malacological genus to which he gives the name of *Callista*. The exception is the animal of *Venus exoleta*, Linn., for which he proposes the name *Arthemis*.

Poli thus establishes a number of genera on the characters exhibited by the animal alone, and these genera are evidently intended to be quite independent of the Linnean genera which were based on the shells alone. Indeed, Poli seems to have regarded the shells as covers or constructions inhabited by the animal rather than as integral parts of the organism.

In the second volume (1795) he goes into specific differences, mentioning and describing the various species of shells, but always using the Linnean names both of genera and species: at the same time he indicates to which of his genera the inhabitant of each species belongs. To take an example, on p. 84 he gives a definition of the Linnean genus *Venus*, mentioning several species as examples. He comments on the wonderful variety of form, size, and sculpture displayed in the shells of this genus, but observes that the animals of all the species known to him exhibit great similarity, with the

exception of *V. exoleta*, to the animal of which he had already given a special name (*Arthemis*).

On p. 95 he describes *Venus chione*, Linn., and on the next page he describes the enclosed animal in detail, giving it the name of *Callista coccinea*, and referring to a figure of which he says—"fig. 1, Tab. xx insipientibus *Venus chione* adparebit Callistam coccineam tegens," thus making it quite clear that his main object was to introduce an independent binomial nomenclature for the animals, and that he had no intention of subdividing the Linnean genus *Venus* or of altering the names of the shells which Linnæus had placed in it. To him the name *Venus chione* represented the shell only, and *Callista coccinea* represented the animal which had constructed this shell. Also he might call *V. chione* a Callistoderm, but he would not and does not anywhere write of it as *Callistoderma chione*.

Moreover, in his opinion, different species of *Venus* shells might be formed by the same species of *Callista*. Thus, on p. 91 we have a description of *V. verrucosa*, Linn., and the mollusc itself is named *Callista gemella*, the specific name being given "ob insignem ejus similitudinem cum Callistâ quam Venerem floridam inhabitare demonstrabimus." Accordingly on p. 98 he says (in Latin), "the mollusc which *Venus florida* encloses is *Callista gemella*, and we have shown that *V. verrucosa* is (also) a cover (tegumento) of this," referring back to p. 91.¹

I think it will now be admitted that Poli's intention was to introduce two separate and independent systems of nomenclature, one for the molluscs and the other for the shells, each system having its own series of generic and specific names. Consequently his list of the Sicilian species of *Venus* and their 'inhabitants' reads as follows:—

SHELL.	ANIMAL.
<i>Venus chione</i> , Linn.	<i>Callista coccinea</i> .
<i>V. verrucosa</i> , Linn.	<i>Callista gemella</i> .
<i>V. gallina</i> , Linn.	<i>Callista candida</i> .
<i>V. rudis</i> , Poli.	? (animal not known).
<i>V. florida</i> , Linn.	<i>Callista gemella</i> .
<i>V. leta</i> , Linn.	<i>Callista multicirrata</i> .
<i>V. exoleta</i> , Linn.	<i>Arthemis pudica</i> .
<i>V. litterata</i> , Linn.	? (animal not known).

It will be noticed that in the "Shell" column there occurs the name *Venus rudis*, Poli, because he had described a new species under this name. This specific name is rightly accredited to Poli, because he was the first to distinguish it from the other species of the Linnean genus *Venus*, and because it is clear that he intended the name to apply to the shell and not to the animal, which it seems he had not been able to examine.

Moreover, he seems to have imagined that it would be convenient to have distinctive generic names for the shells regarded merely as the covers or integuments of his Molluscan genera. Such names he

¹ For these particulars and quotations from Poli I am indebted to the kindness of Mr. J. H. Ponsoyby.

provides by compounding the Greek word *derma* with the name of each genus. Thus, from the *Callista*-group of animals we have the generic name *Callistoderma* for the shells, which form the coverings of the various species of *Callista*.

In thus attempting to develop a nomenclature for the animals as well as for the shells he was really only following in the footsteps of Linnæus, who also used a separate terminology for the animals of different kinds of Mollusca, but apparently he saw so little difference in them that he was content to give a single name, such as *Tethys*, *Limax*, or *Ascidia*, to a whole order or division of Molluscous animals. Poli, on the other hand, saw that the animals of each order did present differences which might be regarded as generic, though the genera so distinguished might not always correspond or coincide with the genera established on the shells.

In this connection it is worthy of note that Poli's idea was thoroughly understood by a writer who may have been his contemporary, and who published an essay on the classification of shells only sixteen years after the date of Poli's second volume. This was J. K. Megerle (von Mühlfeld), whose "Outline of a new System of Conchology" was published in 1811.¹ He defines his genera by the characters of the shell and its hinge, and at the end of each description he briefly states that the animal is a "so-and-so," using a combination of Linné's and Poli's names for the molluscs. Thus under his genus *Tapes* he says "the animal is a *Callista*"; similarly of *Mactra* he says the animal is a *Callista*, but of *Pisum* he says the animal is a "*Tethys*."

Lamarck, on the other hand, though also a contemporary, seems to have been entirely ignorant of Poli's magnificent work.

Swainson, however, in his Treatise on Malacology (1840) shows that he was fully aware of the fact that the generic names proposed by Poli were only applicable to the animals, for on p. 16 he remarks: "In estimating the merits of these three great men—Poli, Cuvier, and Lamarck—in regard to their arrangement of the testaceous Mollusca, it may be stated that the first confined his system entirely to the animal, giving to it a different name to that of the shell, so that if the animals of two conchological genera (as *Avicula* and *Lima*) were nearly alike, they were placed in his system in one and the same genus."

So far as I can ascertain, Leach (in 1852)² was the first to introduce some of Poli's generic names into our conchological nomenclature, under the erroneous impression that they were applicable to shells. In the following year (1853) Mörch³ used several of Poli's names in the same manner, and although this publication was merely a sale-catalogue the names used and proposed by him have always been regarded as properly published. A few years later the brothers H. and A. Adams, in their "Genera of Recent Shells," the latter portion of which was issued in 1856-8, adopted most of Mörch's

¹ Der Gesellsch. Naturforsch. Freunde, Berlin Magazin (1811), p. 38.

² "Synopsis of the Mollusca of Great Britain," edited by J. E. Gray, 1852.

³ Cat. Conch. Comes de Yoldi, part ii, Hafnia, 1853.

names, including those derived from Poli. They have since been used by many authors on the Continent and in America.

Having now explained Poli's method of nomenclature, and the use which was subsequently made of some of his names, I will now briefly consider whether any usage of them can be justified under modern regulations.

In the first place it may be argued that it does not matter what the original intention of Poli may have been, for since both the shell and the animal are now recognized to be parts of one and the same organism, a name applied to the one can now be applied to both. Hence, if Poli was the first to distinguish and to give a name to any Molluscan animal, or generic group of animals, that name can be used in our modern nomenclature.

This argument, however, can only hold good in cases where no displacement of a Linnean or other older name is involved. It may apply to one or two of the cases where only single species are quoted by Poli. Thus *Glossus* was the name given by him to the animal of the shell called *Chama cor* by Linnæus and afterwards generically separated by Lamarck under the name of *Isocardia cor*. I do not see that any reasonable objection can be made to the adoption of Poli's name *Glossus*, which antedates that of Lamarck. The specific name given to the animal by Poli will, of course, be dropped in favour of the Linnean name *cor*; neither is there any necessity to use the term *Glossoderma*, because that was only introduced after the description and naming of the *Glossus* animal.

In other cases, however, where Poli's malacological genus included the animals of two or more Linnean genera of shells the circumstances are different, and I think that his use of the name for a group of animals apart from their shells should have been properly understood and respected. No one ought to have applied the name *Callista*, for instance, to certain species of *Venus*, since it was Poli's express intention to include species of *Mactra* as well as *Venus* under this denomination, and he had no idea of interfering with Linnæus' nomenclature of the shells. Such a use of the name *Callista* is not in any sense Poli's use of it, but is a new and different application of it by later authors, such as Leach and Mörch; if, therefore, the name *Callista* is to be admitted into modern nomenclature it must date from one of these authors and not from Poli.

Now since neither Leach nor Mörch specified a type for their genus *Callista*, the type of the genus must be determined in accordance with the rule recently adopted by the International Zoological Congress at Boston.¹ So far as I can ascertain, the first author to designate a type was Meek, in 1876.² He gives *Venus chione* as the type; whence it follows that Mörch's use of the name (1853), and not Leach's (1852), must be accepted as the original date for the genus *Callista*.

¹ See *Science* for October 18th, 1907.

² U.S. Geological Survey of the Territories, Reports, vol. ix, p. 177 (1876).

It appears to me that all Poli's genera must be examined in this manner with the object of deciding whether they should date from Poli himself or from some later author, and further I think that none but the names which have already been imported into conchological nomenclature should hereafter be revived. *Hypogæa*, for instance, has not been used by any conchologist since Poli proposed it for a group of animals belonging to a certain species of the Linnean genera *Pholas*, *Solen*, *Tellina*, and *Donax*, and in my opinion it ought not to be revived for any section or subgenus of any of these genera.

On the other hand, if one of Poli's names has already been so used it seems better to confirm its use than to burden our nomenclature with another new name for the same thing. Thus *Peronæa*, proposed by Poli to designate the animals belonging to certain other species of *Tellina* and *Donax* (Linneus), was employed by Mörch for a section of the shell genus *Tellina*, represented by *T. planata*, Linn., and *T. nitida*, Poli. He did not indicate a type, however, and so far as we can ascertain the first author to designate a type for *Peronæa* was Stoliczka in 1871,¹ that type being *T. planata*. In 1900 Dr. W. H. Dall, who unreservedly rejects all Poli's names whether adopted by others or not, proposed the name *Peronidia* for the same section of *Tellina*,² with *T. nitida* (Poli) as the type. I can see no reason why *Peronæa* should not be accepted from Mörch with *T. planata* as its type, and consequently think that *Peronidia* should be abandoned as a synonym.

The following is a list of Poli's generic names, those which have been used conchologically by subsequent authors being indicated by an asterisk; these need investigation and fixation to some particular type, but the remainder should be relegated to oblivion:—

<i>Hypogæa</i> .	<i>Glaucus</i> .
* <i>Peronæa</i> .	<i>Daphne</i> .
* <i>Callista</i> .	<i>Echion</i> .
* <i>Arthemis</i> .	<i>Peloris</i> .
<i>Cerastes</i> .	<i>Chimæra</i> .
* <i>Loripes</i> .	<i>Callitriche</i> .
<i>Limnæa</i> .	* <i>Argus</i> .
<i>Psilopus</i> .	* <i>Axinea</i> .
* <i>Glossus</i> .	

It only remains to consider what use has been made of the names employed by Poli for the shelly coverings of his Molluscan genera. Mörch revived three of them—*Peronæoderma* for a section of *Tellina*, *Daphnoderma* for a section of *Arca*, and *Cerastoderma* for certain species of *Cardium*. I think that *Peronæoderma* should not be used as well as *Peronæa* for a section of *Tellina*; *Cerastoderma* could only be used for *Cardium edule*, Linn., and its congeners, if regarded as a separate section of the genus; *Daphnoderma* can also be used by anyone who thinks that *Arca Domingensis* represents a group of sufficient importance to bear a sectional name.

¹ "Cretaceous Pelecypoda" in *Palæont. Indica*, p. 117.

² "Synopsis of the Family Tellinidæ": *Proc. U.S. Nat. Mus.*, vol. xxiii, p. 291 (1900).